Year 9
Term 2A

Name _____

Form _____

St Cuthbert's Catholic High School

MORE THAN A SCHOOL

St Cuthbert's
Catholic High School
Live life in all its fullness

"Knowledge is love and light and vision."

Helen Keller

(research 10 facts about Helen Keller)

Year 9 Knowledge Organiser: Term 2A

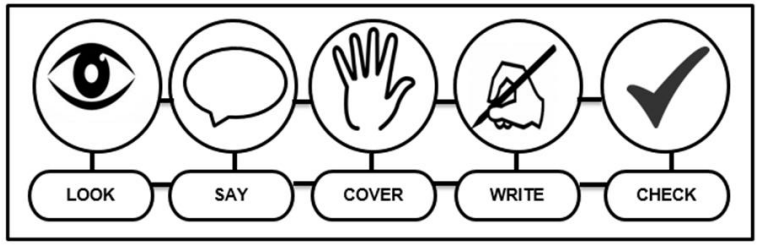
Instructions for using your Knowledge Organiser

The timetable on the next page tells you which subjects you should be studying on which days (it doesn't matter if you have that subject on that day or not, you should follow the timetable).

You are to use your exercise book to show the work you have done. Each evening you should start a new page and put the date clearly at the top.

You need to bring your KO and exercise book with you EVERY DAY to school. Your KO and exercise book will be checked regularly in form time.

You will also be tested in your lessons on knowledge from the organisers.



You must use the revision strategy Look – Say – Cover – Write - Check to learn the knowledge. You can also use your KOs and book in a number of different ways but you **should not just copy** from the Knowledge Organiser into your book.

Presentation

You should take pride in how you present your work:

- Each page should be clearly dated at the top right hand side with the **Subject** written in the middle e.g. English.
- Half way down the page a line should divide it in two with **Next Subject e.g. Maths** written above the dividing line.
- Each half of the page should be neatly filled with evidence of self-testing. There should be an appropriate amount of work.
- Failure to show pride in your presentation or wasting space on your page with large writing or starting a number of lines down will result in a **negative AtL**.

Year 9 Knowledge Organiser Homework Timetable

You are expected to study the subjects shown on your timetable each day. You need to spend 20 minutes on each subject and you will need to evidence your work in your exercise book.

WEEK A	Subject 1	Subject 2	Subject 3
MONDAY	English	Spanish	Geography
TUESDAY	Science	Maths	PD
WEDNESDAY	History	Music	Science
THURSDAY	RE	Maths	Food
FRIDAY	Computing	Technology	English

WEEK B	Subject 1	Subject 2	Subject 3
MONDAY	English	Drama	Geography
TUESDAY	Science	Maths	RE
WEDNESDAY	History	PE	Science
THURSDAY	RE	Maths	Spanish
FRIDAY	Computing	Art	English

Reading Log

"The more that you read, the more things you will know. The more that you learn, the more places you'll go"

Dr Seuss

Use this reading log to record the books you read and how long you have spent reading.

Week	MON	TUE	WED	THURS	FRI	SAT	SUN	Book(s) read (title and author)	Time spent reading	Parent comment/signature
Week 1										
Week 2										
Week 3										
Week 4										
Week 5										
Week 6										

Year 9 Religious Education – Term 2A Galilee to Jerusalem

Big Questions:

- ✓ What is Mark's Gospel about?
- ✓ What is distinctive about it?
- ✓ What is a vocation?
- ✓ Does everyone have a vocation?
- ✓ What are religious vocations?

1) Gospel means 'good news'.
The Gospels tell us stories about Jesus and his teachings and actions. Many people believe that Mark was writing his gospel for persecuted Christians. The focus of his gospel is on Jesus' death and resurrection (16 chapters are about this!). This demonstrates to Christians that there is hope for them, through Jesus.

2)**Vocation means a calling from God.**
Just as Jesus called his Disciples to leave their homes and families, God has a calling or vocation for all of us. For some people, this can be a calling to the religious life – such as being ordained a priest or choosing to become a nun or monk. For others, marriage and raising children can be their vocation. Some people believe that jobs such as teaching, nursing, doctors or social work are also forms of vocation as they require certain gifts or talents.

w/b 6 Jan	Key words & definitions	w/b 27 Jan	Section 2(blue)
w/b 13 Jan	Section 1 (red)	w/b 3 Feb	SOWAA 4, 5, (red)
w/b 20 Jan	SOWAA 1, 2, 3 (purple)	w/b 10 Feb	recap all

Key words	Definition
Gospel	Means 'good news'
Persecuted	To be victimised (in this case on the basis of religion)
Disciple	To be a follower of Jesus
Son of Man	A title used by Jesus to refer to himself
Ministry	Jesus' ministry was the three years he spent teaching, preaching and performing miracles
Lay people/laity	Baptised but not ordained members of the Church
Vocation	A calling from God to do a certain thing in life
Ordination	Becoming a priest within the Catholic Church
Chastity	A vow taken to remain unmarried and not take part in sexual activity
Obedience	A vow taken that the person will obey the will of God through the words of a leader such as a bishop.
Sacrament	An outwards sign of God's grace
Anointing	Anointing someone with oil as a symbol of strength – used within some Catholic sacraments.

Home learning:

Sources of Wisdom and Authority (SOWAA)

'Follow me and I will make you fishers of men'
Mark 1 – Jesus calls the disciples

'If anyone would come after me, let him deny himself and take up his cross and follow me'
Mark 8

'But many who are first will be last….and those who are last, first.
Mark 10

'You are my rock Peter, and on this rock I shall build my Church'
Matthew 16

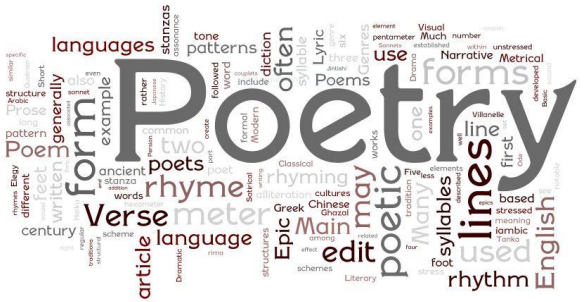
'Go therefore and make disciples of all nations, baptising them in the name of the Father, the Son and The Holy Spirit, teaching them to observe that I have commanded you.'
Matthew 28:19-20

Through the sacrament of Holy Orders priests share in the universal dimensions of the mission that Christ entrusted to the apostles. (CCC)

Year 9 English - Term 2A: War Poetry

Task 1a: Learn the definitions of these poetic terms.

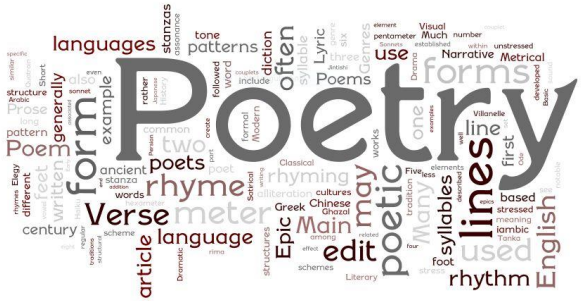
Poetic language	Meaning
Simile	A comparison made using the words "like" or "as."
Metaphor	A comparison – made directly or indirectly – without using "like" or "as."
Personification	Giving human characteristics to something which is not human.
Onomatopoeia	Words which attempt to imitate sounds.
Alliteration	A repetition of consonant sounds.
Plosive	"b," "p," "t" and "d" sounds – which can be harsh, aggressive or shocking.
Sibilance	Repeated "S" sounds – most often caused by "s" "ss" and "c." These can be harsh, smooth or sickly.
Assonance	A repetition of vowel sounds.



Year 9 English - Term 2A: War Poetry

Task 2: Learn the definitions of these poetic terms.

Anaphora	A repetition of words, phrases or clauses.
Juxtaposition	Two things being placed close together for contrasting effect.
Oxymoron	A figure of speech in which two contradictory things are placed together in a way which makes peculiar sense. For example, "friendly fire."
Semantic field	A set of words relating to the same topic. "Foul" and "Shot" would appear in the semantic field of sports.
Antithesis	Placing contrasting ideas together.



Year 9 English - Term 2A: War Poetry

Task 3: Complete the definitions and learn the spelling and meaning of the words.	
Vocabulary	**Definition**
Agitated	
Angst	
Ardent	
Fatigue	
Ghastly	

Year 9 English - Term 2A: War Poetry

Task 3: Complete the definitions and learn the spelling and meaning of the words.	
Vocabulary	**Definition**
Patriotic	
Propaganda	
Solemn	
Vengeance	
Writhing	

Year 9 Maths– Term 2A : Rounding, 3D shapes and Pythagoras' theorem

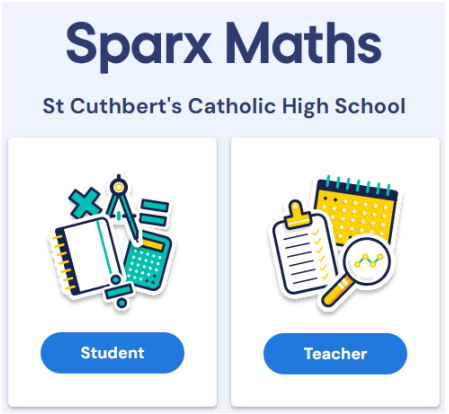
All Maths homework is set online through **Sparx Maths**. Set and due in every **Wednesday at 8am**.

Use the QR code on the right to access the site or go to **www.sparxmaths.uk** and choose student.

To log in, use your school email address and the password you use to access the school computers.
e.g. Joe Bloggs 22BloggsJ@stcuthberts.com

We have chosen to use Sparx Maths as

- The homework is personalised to you.
- Sparx Maths keeps learning from your attempts to create challenging yet achievable questions each week.
- It is proven to improve students grades in Maths.
- There are support videos for each question, if needed.
- It provides your teachers with lots of insights about which topics you need more help with.
- It has consolidation questions each week to help you remember more.
- Because homework is made specifically for you, you will be able to answer every question correctly, but
  - ❑ **some questions may take slightly longer than others**
  - ❑ **some questions will probably need more than one try to get it right.**



Year 9 Maths– Term 2A : Rounding, 3D shapes and Pythagoras' theorem

Use your Knowledge organiser book to write down your question number, working out and answers. This will help you to pass your bookwork checks so that you will get fewer.

Compulsory personalised homework is set and due in each week on a **Wednesday at 8am**, this includes questions on topics you have recently covered in class, consolidation work and times tables. If you complete it by Monday 8am you will earn extra class charts points!

Compulsory

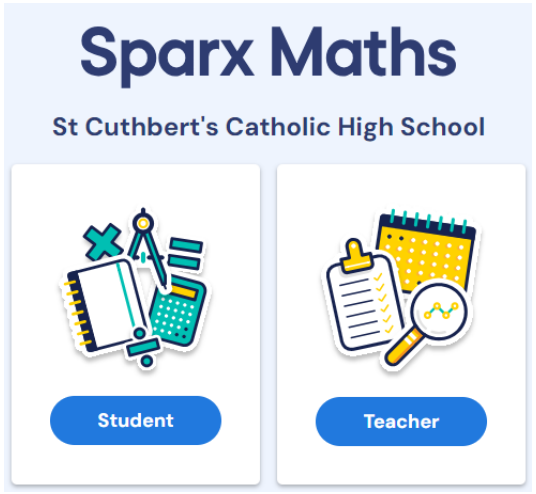
XP Boost

Target

Independent Learning

Sparx produces three personalised task for your each week. Two are optional.

- After you finish your **Compulsory** homework, refine your skills by completing similar problems in **XP Boost**
- Further enhance your skills by completing the **Target** work which is a set of six questions chosen specifically to challenge you
- You can also complete **Independent Learning** to support you further. You choose the level for this.



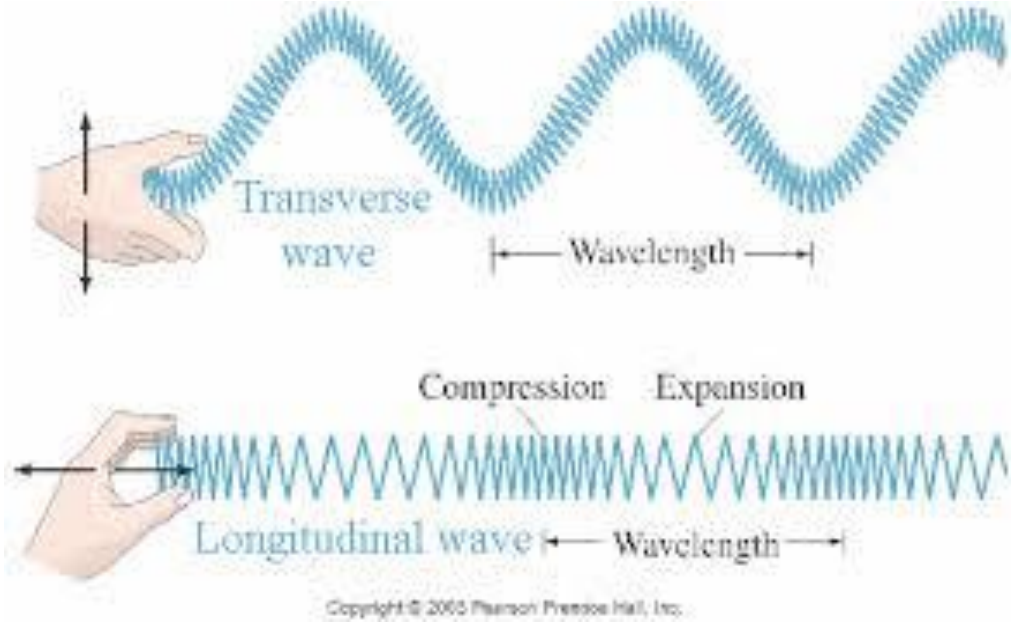
IF YOU DO NOT HAVE ACCESS TO A PHONE, COMPUTER, LAPTOP, TABLET COME TO THE SPARX CLUB TUESDAY LUNCH TO COMPLETE YOUR HOMEWORK

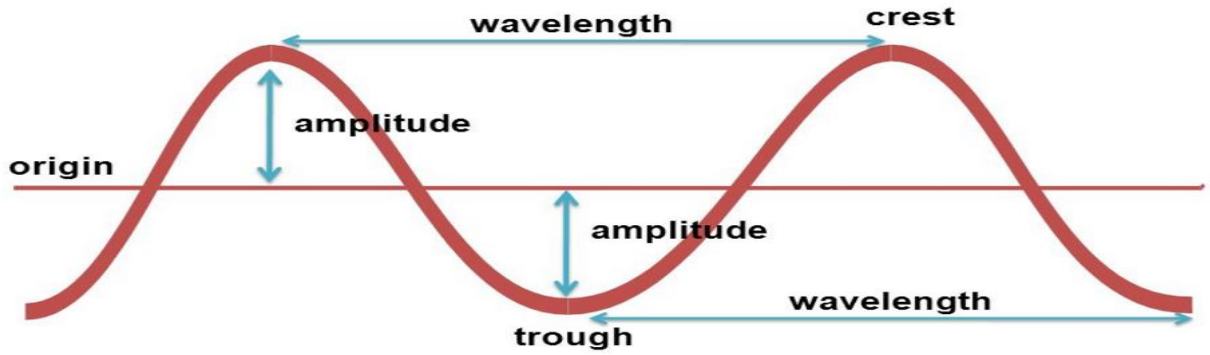
Year 9 Science – Term 2A

Key Words

Transverse	Wave vibration is perpendicular (at right angles) to the direction of energy transfer.
Longitudinal	Wave vibrations are parallel to the direction of energy transfer.
Frequency	The number of wave crests passing a fixed point every second.
Amplitude	Height of a wave crest or trough of a transverse wave from the rest position.
Wavelength	The distance from one wave crest to the next.
Compression	Squeezing together.
Rarefaction	Change of direction of a light ray passing across a boundary between two transparent substances.
Wave speed	The distance travelled per second by a wave crest or trough.
Reflection of waves	The change of direction of a light ray/wave.
Refraction of waves	The change of direction of a light ray across a boundary from one medium to another.
Carrier waves	Waves used to carry any type of signal.
White light	Light that includes all the colours of the spectrum.
Mechanical waves	Vibration that travels through a substance.
Electromagnetic waves	Electric and magnetic disturbances that transfer energy from one place to another.

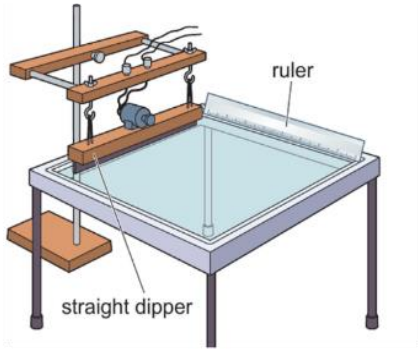
Year 9 Science – Term 2A





This image shows how you can make waves with a rope or slinky by moving one end up or down. This type of wave is transverse. If you push and pull the slinky you will notice there are areas of compressions and rarefactions. These are longitudinal waves.

The ripple tank



Wavelength: Use the markings on the ruler to estimate the wavelength of the waves (this could be done with a digital camera).

Speed: Mark two points on the edge of the ripple tank and measure the distance between them. Use the stopwatch to find out how long it takes a wave to go fr one mark to the other. Divide the distance (in m) by th time (in s).

$$V = f \times \lambda$$

WAVE SPEED = FREQUENCY X WAVELENGTH
(m/s) (Hz) (m)

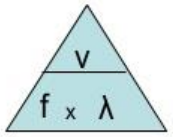
$$speed = \frac{distance}{time}$$

The Wave Equation

V = speed of wave (m/s)

f = frequency of wave (Hz)

λ = wavelength (m)

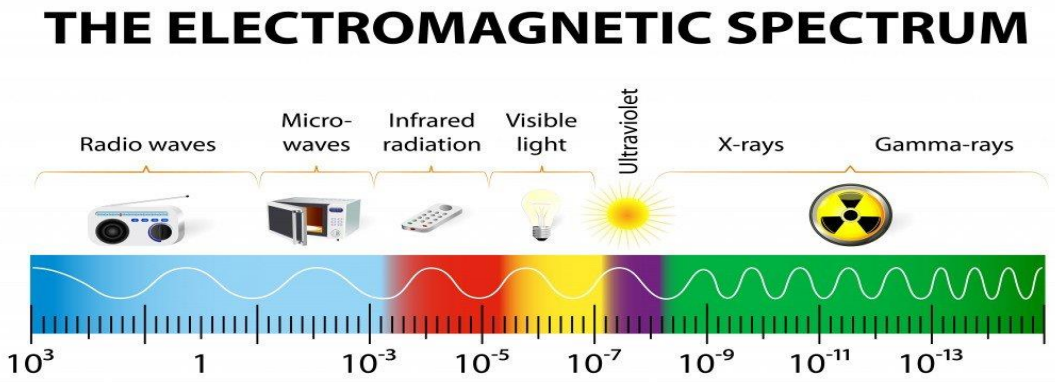


$$v = f\lambda$$

$$\text{Period (T)} = \frac{1}{\text{Frequency (F)}}$$

Year 9 Science - Term 2A

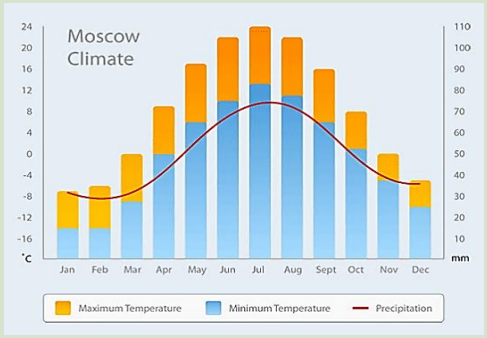
Electromagnetic radiation	Uses	
Radio waves	Broadcasting and communications – their longer wavelength means they travel further in the Earth's atmosphere, reflecting off hills and the upper atmosphere.	
Microwaves	Cooking food – microwaves are absorbed by water molecules causing them to vibrate (heat up). Satellite transmissions – their wavelength penetrates our atmosphere.	
Infrared	Heater and night vision equipment – all objects, including people, give out infrared rays which can be detected even at night. It's also used for television remote controls.	
Visible light	Human vision, photography and optical fibres – it's the only part of the spectrum we can see.	
Ultraviolet	Fluorescent lamps – they have chemicals inside them which absorb ultraviolet rays and convert the energy to visible light.	
X-rays	Medical equipment – they enable us to see the internal structure of objects and materials by passing through some substances (eg body tissue) but being absorbed by others (eg bone).	
Gamma rays	Sterilising food and medical equipment – they are highly penetrative and can kill.	



Year 9 Geography – Term 2A: Russia

Moscow

- Moscow is Russia's capital city. It has a **population of 11 million.**
- Moscow has more billionaires than any other city in the world
- 9 million commuters ride the Moscow Metro every day – more than London & New York combined!
- Wealthy Russians hire ambulances to beat the Moscow traffic jams.



Volga River

Source Valdai Hills - 350m above sea level

Rybinsk Reservoir was formed by the construction of the Rybinsk Hydroelectric Dam in 1935. The filling of the reservoir began in 1941 and by the time it was completed in 1947, 150,000 people had to be moved and the town of Mologa, along with 663 villages had completely disappeared under the water of the reservoir.

Yaroslavl is one of the most fascinating cities found along the banks of the Volga. Home to many cathedrals and works of art, Yaroslavl is classed as a World Heritage Site.

At **2,294 miles** long, the Volga is **Europe's longest river**

Volgograd Between 1925-1961 Volgograd was known as **Stalingrad**, named after Joseph Stalin – leader and dictator of the Soviet Union at the time. The city became famous for its resistance during the **Battle of Stalingrad** against the German Army in World War II. It is often regarded as the largest and bloodiest battle in the history of warfare.

Volga Delta At 160km wide, the Volga has the largest delta in Europe. It is criss-crossed by hundreds of smaller rivers and streams. It is the only place in Russia where pelicans and flamingos can be found.

The Volga flows out into the **Caspian Sea** – the largest enclosed area of water on earth. The northern part of the Caspian Sea is also one of the **lowest points on Earth**. The Caspian Sea is bounded by Russia to the north west, Kazakhstan to the north east, Azerbaijan to the west, Iran to the south and Turkmenistan to the south east.

The Ural Mountains

The Earth's crust is not solid. It is divided into **tectonic plates**

The Ural Mountains are about **300 million years** old. They were created by **the European plate colliding into the Asian plate**. This is now one huge plate – the **Eurasian plate**.

The Ural Mountains form the geographical boundary between **Europe and Asia**

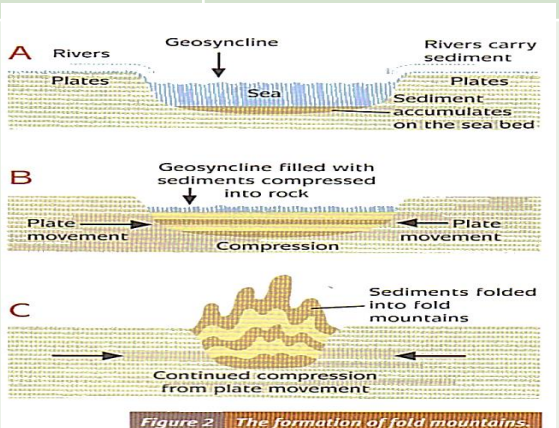
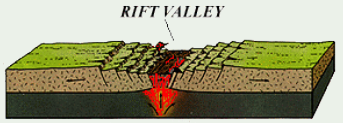


Figure 2 The formation of fold mountains

Lake Baikal

- Lake Baikal is taken from the Mongolian word 'Baykal', meaning 'Nature Lake'.
- The **largest freshwater lake** in the world – containing **20% of the world's unfrozen freshwater.**
- At its maximum **depth of 1,642m**, Baikal is the **world's deepest lake.**
- At **25 million years old**, it is considered the world's oldest lake.
- It is also considered the **world's clearest lake.**

Magma rising from below puts pressure on the crust causing it to **fracture** and **fault.**



The **tectonic plates** are moving **apart** (known as a constructive margin). This causes the fractured plate to split apart and drop downwards. This area is known as a **graben.**

This processes continues, causing a **rift valley**, which becomes wider and deeper. Lake Baikal is created as rivers fill the **graben** with water.

Year 9 History – Term 2A: The Holocaust

1

Three Historical Reasons for Anti-Semitism:
1. Jews were blamed for the crucifixion of Christ.
2. Jews were blamed for the Black Death
although many Jews were killed by the disease.
3. Jews were driven out of many Western European countries in the Middle Ages. They were expelled from England in 1290, from France in 1306 and 1394. All of these actions made the Jews outliers from the rest of their community and therefore different and victims of prejudice and discrimination.

2

Hitler's Persecution of the Jews: Hitler blamed them for making Germany weak.

- 1st April 1933: Hitler's first action directly against the Jews was a Boycott of all Jewish Businesses.
- May 10, 1933 - Burning of books in Berlin and throughout Germany.
- In Sept - Nazis establish Reich Chamber of Culture, then exclude Jews from the Arts.
- Summer 1935 Placards saying Jews not wanted displayed in resorts, public buildings, restaurants and cafes .(these were removed during the 1936 Olympic Games).
- A massive, coordinated attack on Jews throughout the German Reich on the night of November 9, 1938 into the next day, has come to be known as Kristallnacht or The Night of Broken Glass.

3

The Road to the Holocaust World War Two
The Nazis invaded Eastern Europe and used The Einsatzgruppen who were special mobile killing squads created in 1939. In 1941 the Einsatzgruppen would move through Nazi controlled areas and round up Jews, gypsies, undesirables and disabled people. They rounded them up and shot them.
By the end of 1941, more than one million Jews had been murdered by mobile killing squads. Nearly all of the 200,000 Jews in Lithuania were killed in this way.

4

The Warsaw Ghetto Uprising was an armed rebellion of Jews in Warsaw, Poland, against Nazis in 1943, to keep the Nazis from sending more Jews to be killed at the Treblinka death camp. The revolt lasted from April 19 until it was crushed by the Germans on May 16. Total casualty figures for the Warsaw Ghetto Uprising are uncertain. The Germans likely lost several hundred soldiers during the 28 days that it took them to kill or deport more than 40,000 Jews. The fighters knew that they were bound to lose, but the honor of the Jewish people was at stake. They chose to die fighting and to inflict casualties on the enemies.

Year 9 History – Term 2A: The Holocaust

5

The Final Solution

The Wannsee Conference was a meeting of senior government held in the Berlin suburb of Wannsee on 20 January 1942. It was decided whereby most of the Jews of German-occupied Europe would be deported to occupied Poland and murdered. This was a key turning point as the decision was now to murder all Jewish people under Nazi control.

6

The Death Camps: Auschwitz Birkeneau, Chelmno, Treblinka, Belzec, Sobibor, Majdanek in the far east of Poland.

The death camps used gas chambers to murder Jews and others on an industrial (large) scale. Jews were brought from all over Europe via trains. Selection happened when you arrived. Women with children, the Elderly and the unfit went straight to the gas chambers. The Jews were told they were being taken to showers but the showers were in fact gas chambers.

7

In late summer 1941 the Nazis began experimenting with a new killing method – a poison gas called Zyklon B. As the war progressed, Auschwitz-Birkenau was selected by the Nazis as the main killing site for European Jews, because of its location and access to the rail network. From this point on increasingly larger poison gas chambers were constructed at the camp to kill people using Zyklon B. In 1942 Jews from across Europe began to be transported to Auschwitz-Birkenau. The peak of the slaughter occurred in 1944, when more than 400,000 Hungarian Jews were killed in just two months.

8

Key word	Definition
Tyranny	An act or the pattern of harsh, cruel, and unfair control over other people.
Persecution	Persecution is the mistreatment (bad treatment) of an individual or group by another group.
Inequality	The unfair situation in society when some people have more opportunities, money, etc. than other people
Genocide	The planned and organized killing of a group of people.
Anti-Semitism	Hatred of Jewish people.
Migration	The movement of a person or a group of people to settle in another place.
Protest	When a lot of people come together to show others that they strongly like or are against an idea or event.
Resistance	A situation in which people or organizations fight against something or refuse to accept or be changed by something.
Rebellion	an effort by many people to change the government or leader of a country by the use of protest or violence.

Year 9 Personal Development – Term 2A

Core British Values

Tolerance - Understanding that we all don't share the same beliefs and values.

Democracy - A culture built upon freedom and equality, where everyone is aware of their rights and responsibilities.

Liberty - Protection of your rights and the right of others you are with.

Responsibility - Something that it is your duty to deal with

Respect - Respecting the values, ideas and beliefs of others whilst not imposing our own onto others.

Law - The need for rules to make a happy, safe and secure environment to live and work.

Social - Moral - Spiritual - Cultural

Year 9 Art – Term 2A: Artist Focus – Still Life

Still life is one of the principal genres (subject types) of Western Art and the subject matter of a still life painting or sculpture is normally anything that does not move or is dead.

Still life (plural: *still* lifes) is a work of art depicting mostly inanimate subject matter, typically commonplace objects which are either natural (food, flowers, dead animals, plants, rocks, shells, etc.) or man-made (drinking glasses, books, vases, jewellery, coins, pipes, etc).

Still Life has been a theme for Art throughout history. Roman mosaics used still life themes to decorate their buildings. Van Gogh explored his painting and colour techniques by producing numerous versions of sunflowers. Patrick Caulfield produced simplistic still life screen prints and paintings using simple flat colours and bold line.

Key Words and Specialist Vocabulary:

Representation: The description or portrayal of someone or something in a particular way.

Study: A detailed investigation and analysis of a subject or situation.

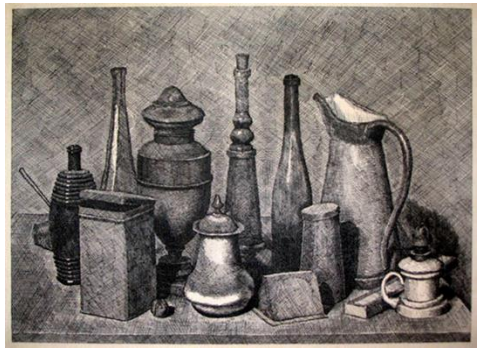
Year 9 Art – Term 2A: Artist Focus – Still Life

Georgio Morandi 1890—1964

Morandi was an Italian painter and printmaker who specialized in still life. His paintings are noted for their tonal subtlety in depicting apparently simple subjects, and items that he readily had in his studio.

He repeatedly **painted** the same selection of familiar items, including bottles, bowls, pots and boxes. In his **paintings**, they lose their domestic purpose, to become sculptural objects that invite meditation and contemplation.

Through the repetitive process of reproducing these simple objects he was able to explore a variety of colour palettes, techniques, compositions, forms and perspectives



Why do Still Life?

Groups of objects have long been a favourite subject for artists and it is an excellent way to improve your observational skills through the study of your selected objects.

Produce your own still life group and see how many ways that you can reproduce them exploring different
materials, lines, colours . See how realistic you can make your representation . Take photographs of your objects
so you can explore more viewpoints or try and use the influence from another artist like Van Gogh or Caulfield.

Year 9 Computing - Term 2A: "I am a network engineer"

COMPUTING

Local Area Networks

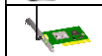
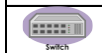
What is a Computer Network?
Two or more computers connected together to share information and resources. This can involve physical or wireless connections, or both.

What is a LAN?
A LAN is a Local Area Network. It is a connected set of computers and other devices. Each device is called a node (e.g. computer, printer, etc.). A LAN is installed on one site, over a small geographical area and the network equipment will be owned by the organisation.

Advantages & Disadvantages of Networking Computers

Advantages	Disadvantages
-It allows communication between workers or students -It allows data to be shared -It allows peripherals (e.g. printers) to be shared -It allows computers to be upgraded more easily -It allows distributed processing: the ability for a single program to be run simultaneously at various computers.	-Expertise required to set up and maintain a large network (costly) -Security issues from unauthorised access to data -Measures to secure a network include: *Passwords – strong passwords use a range of character types* *Changing passwords frequently* *Not allowing users to install software* *With wireless access, use encryption*

Devices of a LAN

Image	Equipment
	At least two computers (Nodes)
	Each computer needs a Network Interface Card (either wired or wireless). The NICs convert the data signals from the nodes into data signals that can be transferred across the network.
	Data Transfer Media – the medium through which data is transferred (Wires or Wireless Technology)
	Hub – Connects devices together. Not intelligent – data is sent to all nodes across the whole of the network.
	Switch – Connects devices together. An intelligent device that can sends data to the nodes that the data is intended for, which makes networks faster. *A LAN needs either a hub or a switch, not both.*

Wide Area Networks

A Wide Area Network (WAN) covers a large geographical area – may even be worldwide. Some of the devices in this network may be provided by telecom companies, such as phone lines and satellites.

The Internet
The biggest WAN in the world is 'The internet'. It is a massive network of networks. A ginormous collection of connected computers.

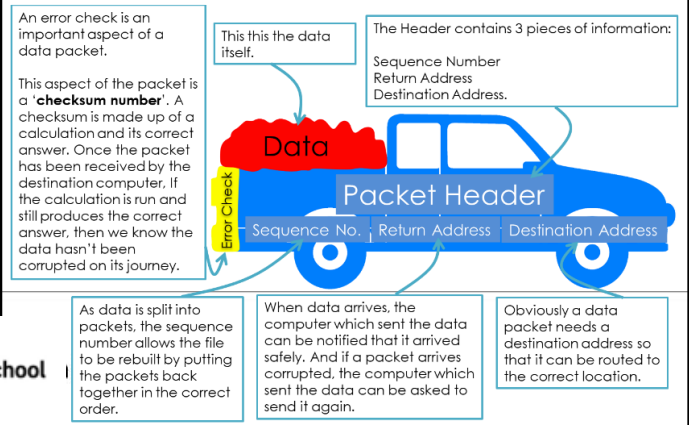
Key Vocabulary

Key Word	*Definition*
Network	Two or more computers connected together to share data and devices
LAN	A network over a small (local) area (building or site)
Network Interface Card	A piece of hardware which converts computer signals into a form that can be sent over a network (and convert them back when network data is received)
Switch	A device which passes networked data to the correct nodes
Data Packets	These are created from the splitting up of a file when data is sent across the internet. It is reassembled at the receivers' end to reform the file.
WAN	A network over a large (wide) area (town, country, the world)
Internet	The largest WAN – A network of networks spanning the world
Internet Protocol Address	The unique address of a website or computer (written in digits)
Internet Service Provider	The company that provides your connection to the internet.
Uniform Resource Locator	The technical term for a web address.
Domain Name Server	Like a "telephone directory" of the internet's websites.

Data Packets

When files are sent across a network, they are split into millions of data packets. Packets get sent by different routes according to availability so therefore some parts of the file might travel one way around the world and other parts may go in the opposite direction! Packets are reassembled at receiving end.

Data Packet Structure

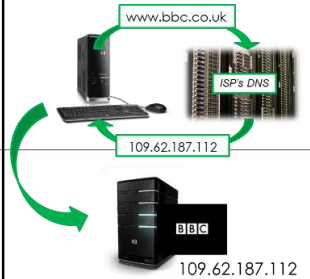


IP Addresses, ISPs, URLs and DNS

There are many acronyms to understand, when studying how the internet works.

Acronym	Description
IP Address	This means INTERNET PROTOCAL ADDRESS. It is a unique number given to every computer on the internet – no two computers can have the same address. E.g. 109.62.187.112. It's just like a postal address – used to identify a house – no two houses have the same address!
ISP	This means INTERNET SERVICE PROVIDER. This is simply the company who provide you with your internet connection. (e.g. BT or Sky)
URL	This means UNIFORM RESOURCE LOCATOR. This is simply a fancy name for a web address, such as: http://www.bbc.co.uk http://www.google.com
DNS	This means DOMAIN NAME SYSTEM. This is the system used to find the computer which hosts the website you are looking for.

How does DNS work?



1. Computers can only connect to other computers if they know their IP address. However, humans can't easily remember IP addresses!
2. So, when we want our computer to connect to a website (e.g. BBC website), instead of typing in the BBC's IP address, we type in the BBC's website URL.
3. The URL is sent to our ISP (internet service provider) and they look up the URL in their DNS 'address book'. They find it and send back the website's IP address.
4. Now our computer can communicate with the BBC website computer (which hosts the website on the internet), directly.

Network Threats & Preventions

Threats

Threat	Description
Malware	Malware is 'Malicious Software'. Examples of malware are viruses, spyware, adware and scareware. Whereas viruses aim to damage the computer system, spyware, adware and scareware all target the user.
Phishing	Phishing seeks to acquire sensitive information about a user such as their usernames, passwords, bank details etc. The way in which this is done is usually through the form of direct electronic communications (emails / phone calls). These emails or phone calls try to impersonate legitimate companies (such as banks) and ask you to give away sensitive information.
Brute Force Attacks	A Brute Force Attack is were criminals will use trial and error to hack an account by trying thousands of different possible passwords against a particular username.
Denial of Service	This method seeks to bring down websites by using up the web server's resources. This is done by acquiring multiply computers (often through malware) to repeatedly try to access (or log into) a website.

Preventions

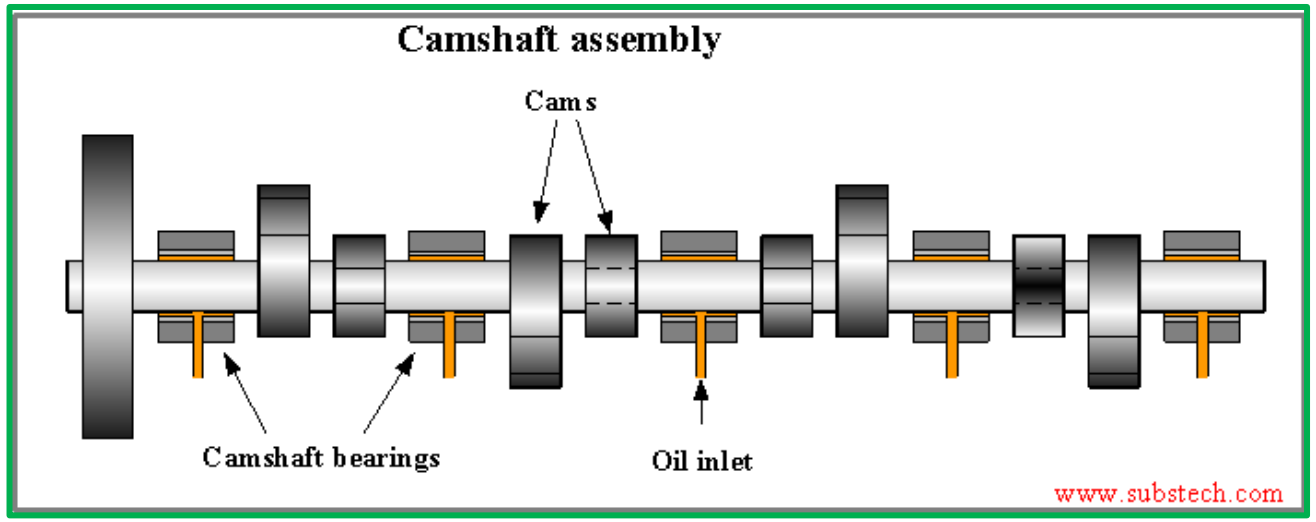
Prevention	Description
Penetration Testing	'Penetration Testing' is where a company will invite / employ experts to try to simulate a range of network attacks such as Denial of Service attacks (DoS), SQL injections and Brute Force Attacks.
Anti-Malware	Anti-malware software is dedicated to finding and destroying malware files.
Firewalls	When files are sent across the internet, they are broken down into small packets of data. The part of the computer which receives these packets is made up of 256 ports (you can think of these ports like a country's ports, which manage people in and out of the country). A firewall monitors the data which flows through the ports.
Passwords	Passwords are in place to ensure that a network has no unauthorised access. As seen before, it is important that passwords are strong (long and with a combination of alpha and numeric characters) so that they are harder to crack under a Brute Force Attack.
Encryption	Encryption is where data is scrambled before being sent across a network so that it is unreadable if intercepted.

St Cuthbert's Catholic High School
Live life in all its fullness

Year 9 Design Technology– Term 2A: Cam Toy

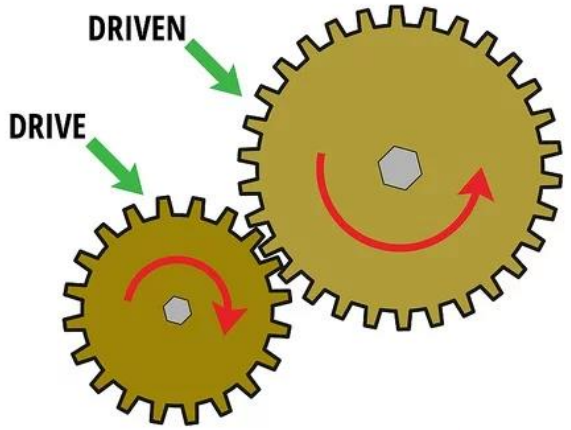
Key vocabulary	Definition
Stock forms	The standard shape and size of materials as they are bought.
User centered design	Design development with the user at the centre of the focus. The designer tries to envisage how the product will actually be used, as opposed to focusing on other areas such as cost.
Mechanical device	Mechanism which produces and/or changes movement.
Planned obsolescence	Deliberately designing the lifecycle of a product to be short, forcing the user to update their products quickly.
Mass production	The manufacturing of large quantities of standardized products, often using assembly lines or automation technology.
Continuous improvement	The identification of improvements and subsequent evolution of products.
Co-operative	A group of people united to meet common social, economic or cultural need through a jointly-owned business.
Ethics	Moral decisions when designing and manufacturing.
Functionality	How well a product carries out its purpose.
Social footprint	The impact a product or individual has on society.

Year 9 Design Technology– Term 2A: Cam Toy



Gear Ratio RPM Calculator

Input gear teeth number	45
Output gear teeth number	15
Gear ratio	3 :1
Input rotational speed	1 rpm



St Cuthbert's Catholic High School
Live life in all its fullness

Year 9 Drama – Term 2A: Devising Theatre Terminology

Keywords and language

Stimulus : anything used to create or inspire ideas. A piece or writing, music, item

Devising : to create drama in response to a given stimulus

Improvisation : creating drama using no script

Hotseating: when someone asks questions of someone taking on a role and they answer as they character

Re-enactment : a moment that is re re-enacted or brought to life

Research : The process of finding out specific information for a specific purpose

Abstract : Meaning non naturalistic. Not like real life

Analysis: To break down and explain how and why you did something

Evaluation: To judge whether something was effective or not, using evidence

Year 9 Drama – Term 2A: Devising Theatre Terminology

Structuring Drama

Linear – continuous narrative where the events happen in chronological order

Non linear – moves backwards and forwards in time (flash backs/ flash forwards)

Inter- connected stories – A series of independent stories that link in some way

Narration – someone telling parts of the story, either in role or as a narrator

Bookending- having a link between the opening scene and the ending scene

Three act structure- having 3 clear parts to the story – start, middle, end.

Cliff hanger – left open ended or on a tense moment with unanswered questions

Resolution – giving a clear ending to the story

Dramatic irony – the audience being aware of something that the characters are not.

Perspective – The point of view that the story is told from

Climax/ anti climax- when the moments of tension are built up and then revealed

Exposition – When different characters are becoming involved in the same thing. Eg. All going for the same job interview.

Complication – a problem or obstacle that occurs for one of the characters

Year 9 Food – Term 2A: Raising agents

Salt

An ingredient that is used in many foods and is also known as sodium. The body uses sodium to balance fluids in the body and it is essential for nerve and muscle function. We only need a small amount of salt in our diet. The table below is a guide to daily maximum amounts for different ages.

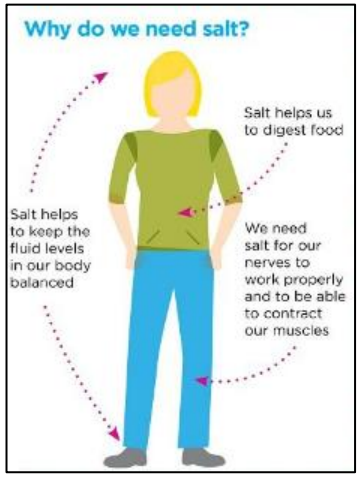
0-6 months	7-12 months	1-3 years
Less than 1g	1g	2g
4-6 years	7-10 years	11 years +
3g	5g	6g

Too much salt can lead to an increase in blood pressure which can lead to a higher risk of a stroke or heart attack.

Scan the QR code to watch a video about salt.

SCAN ME

SCAN TO WATCH



Key vocabulary	Definition
Baking powder	A chemical raising agent that produces carbon dioxide.
Bicarbonate of soda	A chemical raising agent that produces carbon dioxide.
Choux	A light, crisp, hollow pastry used to make profiteroles and eclairs.
Gluten	The general name for all the proteins found in flour.
Micronutrient	Nutrients needed in small amounts, e.g., vitamins and minerals.
Mineral	Essential nutrients for the body to function properly, e.g., calcium.
Steam	Produced when a batter (Yorkshire pudding) gets very hot in the oven.
Vegan	A person who will not eat foods from animal origin.
Vegetarian	A person who will not eat meat and fish.
Vitamin	Essential nutrients for the body to function properly. See table →

Raising agents

Raising agents are added to mixtures to make them rise. When you heat a mixture that contains a raising agent, the gas within it expands and rises resulting in a product with a light and airy texture.

Type	**Examples**
Mechanical raising agent	**Sieving** flour, **whisking** eggs, **rubbing** in fat to flour, **creaming** fat and sugar, lamination (creating layers) in flaky pastry.
Physical raising agent	**Steam** is created in products such as Yorkshire puddings and choux pastry. The mixture needs a high moisture content.
Chemical raising agent	**Bicarbonate of soda** - strong flavoured bakes (gingerbread). **Baking powder** - used to make baked products.
Biological raising agent	**Yeast** - bread making, doughnuts, currant buns.

Year 9 Food – Term 2A: Raising agents

Watch video about choux pastry.

SCAN ME

SCAN TO WATCH

Complete your homework quiz 2.

SCAN ME

SCAN FOR QUIZ

Vegetarians and Vegans

Vegetarians do not eat meat, poultry, fish or shellfish.
Lacto-ovo-vegetarians eat dairy products and eggs.
Lacto-vegetarians eat dairy but not eggs.
Vegans do not eat or use any animal products.

St Cuthbert's Catholic High School
Live life in all its fullness

Vitamins and minerals

These are known as micronutrients, as they are needed in smaller amounts. For each nutrient it is important to know the **function** and **source**. For each there could also be an effect of **deficiency** or **excess**.
The tables shows some of the functions, there are many more.

Vitamin	**Function in the body**
A	Immune function. Healthy skin.
B	Converts nutrients to energy.
C	Protects cells. Aids absorption of iron.
D	Enables absorption of calcium.
E	Antioxidant, protects cells.
K	Blood clotting, helping wounds heal.
Mineral	**Function**
Calcium	Strong bones/teeth. Blood clotting.
Iron	Makes haemoglobin in red blood cells.
Sodium	Balances fluids in the body.
Fluoride	Strengthen tooth enamel and bones.

Scan the QR codes to watch the vitamin and mineral video.
Complete quiz 1.

SCAN ME

SCAN TO WATCH

SCAN ME

SCAN FOR QUIZ

Year 9 Music – Term 2A: Music Technology

Key Information	Why it is Important	History	Composition
Digital music technology encompasses digital instruments, computers, electronic effects units, software, or digital audio equipment by a performer, composer, sound engineer, DJ, or record producer to produce, perform or record music. The term refers to electronic devices, instruments, computer hardware, and software used in performance, playback, recording, composition, mixing, analysis, and editing of music.	Almost every aspect of music creation is now reliant on music technology whether it be: - Composition - Production - Recording - Editing - Performance - Distribution - Consumption	'Analogue' music technologies such as tape recorders, analogue synthersizers and audio effects have been used since the 50s. In the 1960s, bands such as The Beatles began to experiment with this equipment, becoming reliant on it to achieve their desired sound. Now, multitrack recording and effects are commonplace in every studio.	Music technology is not just useful for studios and professionals, but it has opened up a world of possibilities for amateur and hobbyist musicians too. A whole generation of 'bedroom' producers emerged in the 2000s, some of them (such as Avicii) gaining success in the music industry. Technologies such as DAWs, virtual instruments and more powerful computers has meant that no longer is a fully-fledged recording studio needed for producing a record. Almost everything (including instruments!) can be contained inside a computer, in a piece of software called a Digital Audio Workstation (DAW).

Key Words

DAW
Effects
Processors
Digital
Analogue
Synthesizer
Samples
Multitrack
Edit
Audio Interface
Plug-In
Virtual Instrument
MIDI
Bit-Depth
Sample Rate
Reverb
Delay
EQ (Equalisation)
Compression
Mixing
Master Bus

How to use bandlab

M	A	D	T	S	H	I	R	T
melody	articulation	dynamics	texture	structure	harmony	instruments	rhythm	tempo
the tune	how notes are played	loud / soft and any other volume changes	layers of sound and how they fit together	sections of music and how they are organised	chords used	types of instruments heard	the pattern of notes	the speed

Year 9 Physical Education – Term 2A

Blood cells and Respiration

Blood cells

Red blood cells- main function is to transport oxygen around the body.

White bloods cells- they are the cells of the immune system. They are responsible for helping the body to fight disease and infection.

Plasma- The primary purpose of plasma is to transport nutrients, hormones, and proteins around the body.

Platelets- Platelets are tiny blood cells that help your body form clots to stop bleeding.

Air composition

Inhaled air
21% Oxygen
0.04% Carbon dioxide
79% Nitrogen

Exhaled air
16% Oxygen
4% Carbon dioxide
79% Nitrogen

What do you notice about the gas percentages?

Terms of respiration

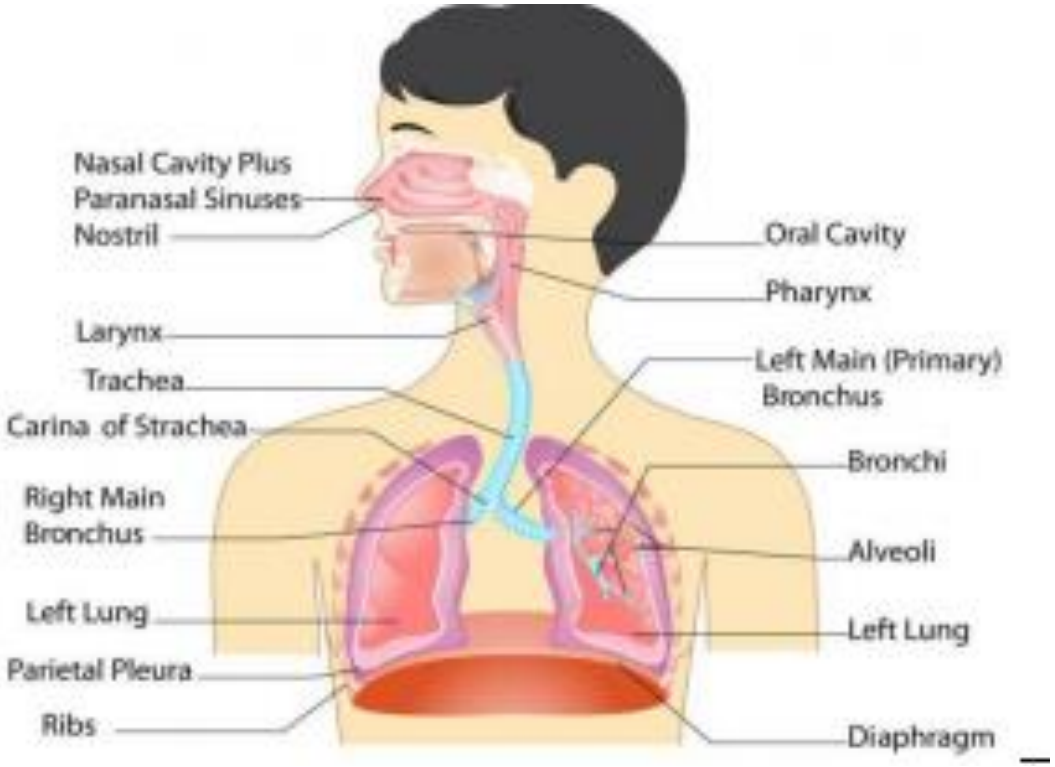
Vital Capacity- the volume of air that can be exhaled from the lungs after the deepest possible breath.

Tidal Volume- the volume of air inspired or expired in a single breath during regular breathing.

Aerobic respiration- is the process of producing energy in cells involving oxygen (Marathon runner).
glucose + oxygen → carbon dioxide + water + energy released.

Anaerobic respiration- glucose breaks down WITHOUT oxygen to produce energy (100m Sprinter).
glucose → lactic acid + energy released.

Blood cells and Respiration



Gaseous Exchange

Gaseous Exchange: Gas exchange is the delivery of oxygen from the lungs to the bloodstream, and the elimination of carbon dioxide from the bloodstream to the lungs and out of the body.

It takes place in the alveoli. The walls of the alveoli are surrounded by a network of blood capillaries. Alveoli are tiny, balloon-shaped air sacs that sit at the very end of the respiratory system and are arranged in clusters throughout the lungs.

1.	2	3	4	5	6
Me encanta… Me gusta mucho… Me gusta… Me flipa Me mola Me fascina Me importa Me interesa… No me interesa… No me importa No me gusta No me gusta nada Odio Detesto No aguanto … (I can't stand…) Lo bueno es… Lo malo es… (The good/bad thing is…) Prefiero… Me gusta más	navegar en la red (to surf the net) enviar correos electrónicos (to send emails) hacer las compras en línea (to shop online) ver videos divertidos (to watch funny videos) jugar juegos en línea (to play online games) chatear en facebook (to chat on facebook) descargar música (to download music) leer blogs (to read blogs) hablar por skype (to talk on skype) hacer investigaciones para los deberes (to do research for hw) tuitear – (to tweet) facebookear (to use facebook) sacar selfies (to take selfies)	**porque…** because **ya que…** because **puesto que…** because **debido al hecho de que…** due to the fact that… **por eso** – for the reason that **sin embargo** however **pero** but **a** to (i prefer… to…) **más que** more than	es…. (it is…) no es… en mi opinión es… a mi punto de vista es (in my point of view it's)	**muy** **bastante** **realmente** **verdaderamente** (truly) **totalmente** **completamente** **demasiado** (too)	entretenido = entertaining aburrido = boring interesante = interesting útil = useful inutil = useless difícil = difficult práctico = practical divertido = fun fácil = easy educativo = educational caro = expensive barato = cheap rápido = quick técnico = technical inseguro = unsafe fascinante – fascinating increíble – incredible/unbelievable
			7 aprendo mucho = I learn a lot puedo estar en contacto con mis amigos = I can stay in touch with friends ahorra tiempo = it saves time		

Notes

Notes

St Cuthbert's Catholic High School

Live life in all its fullness